



## Original communication

## Patterns of suicide in Brunei Darussalam and comparison with neighbouring countries in South East Asia



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## ABSTRACT

A retrospective study of suicides in Brunei Darussalam (Brunei) over a 20 year period from 1991–2010 was conducted by analysing the post-mortem examination and external examination reports and other relevant records. The suicide rate in Brunei is very low (1.9 deaths per 100,000 per year). The majority of the victims were expatriates 82(66%) and hanging was the commonest mode of suicide both in expatriate and local population. The study showed that the suicide rate among the Bruneian Malays was the lowest (0.5 deaths per 100,000 per year) among the different nationalities. The study highlights the demographics and socio-economic background of the victims, methods used in committing suicide, suicide rates in different ethnic groups and predisposing factors. The results of this study would be of use for taking preventive measures to minimize the incidence of suicide.

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## 1. Introduction

Brunei Darussalam (Brunei) is a South-East Asian country situated in the North-West coast of the island of Borneo with a total land area of 5769 sq. km. It comprises two segments of land, the larger part with three districts Brunei-Muara, Kuala Belait and Tutong and the smaller portion, Temburong district which is separated from the mainland by a strip of land belonging to Limbang district of the Sarawak state of Malaysia. The economy of Brunei is based on its natural gas and oil reserves. It is one of the affluent nations in Asia with a per capita gross domestic product of \$49,824.56.<sup>1</sup>

The estimated mid-year population in Brunei in 2010 was 414,400, Malays being the majority community accounting for 66% (273,600); the others include Chinese 11% (45,400), indigenous groups 3.4% (14,000) and expatriates 19.6% (81,400).<sup>2</sup> The indigenous tribes comprise Kedayan, Belait, Tutong, Bisya, Murut, Dusun and Iban. There is a large expatriate population in Brunei employed in the government sector as well as in the private sector. The majority of the expatriates are employed in the country's labour force. In 2010, among the expatriates there were around 32,000 Indonesians, 14,000 Filipinos, 13,200 Malaysians, 9000 Indians, 4500 Thais and 4300 Bangladeshis.<sup>3</sup>

All sudden unexpected deaths in Brunei are investigated by the police and those requiring an inquest are referred for a magisterial inquiry. It is mandatory to carry out post-mortem examinations on all expatriate deaths. However, due to socio-religious reasons only an external examination is carried out on the deaths of Malays except in those occurring under suspicious circumstances and in homicides where a post-mortem examination is mandatory. In this study, post-mortem examinations were carried out on four Malay suicide victims where the circumstances of the deaths seemed suspicious at the initial stages of the investigations. Blood and vitreous samples were taken for toxicology from all the dead bodies irrespective of whether a post-mortem examination was conducted or not. In the cases where only an external examination was conducted, the blood was drawn from the femoral vein.

Suicide has been a global public health problem for a long time; studies have been done in many a country to establish the factors responsible for suicide. Annually nearly one million lives are lost world over from suicide, the majority being in the prime of their lives.<sup>4</sup> The magnitude of the problem is reflected by the number of books and papers published on the subject by a wide range of professionals. Suicide is one phenomenon which has no social boundaries; it is prevalent in the developed as well as in the under-developed countries, in rich and poor families and also among the educated and un-educated. The psycho-social impact on the individual families due to suicide is devastating. Among the precipitating factors responsible for suicide, poverty, some life time events such as loss of a loved one, inter-personal conflicts, disturbed

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relationships, psychiatric illness, failed love affairs etc. take the centre-stage. The precipitating factors driving the people to take their own lives are complex and may be a result of more than one factor operating at a given time. Also in a good number of cases it is not possible to pin point the exact reason for taking one's own life. It is well known that the actual incidence of suicide in most countries is much higher than the official figures as there is underreporting due to lack of evidence, incomplete investigations or because of the social stigma attached to suicide.

Suicides are encountered among both the local and expatriate communities in Brunei. Our objectives were to study the patterns of suicide in Brunei, identify any significant differences in the suicide rates among different ethnic groups, predisposing factors leading to suicide, to compare the findings with the studies conducted in the other countries in the region and to ascertain remedial measures to reduce the incidence of suicide. Hitherto there is no published literature on suicide in Brunei.

This paper is based on a retrospective analysis of the deaths due to suicide in Brunei over a 20 year period from 1991 to 2010. Brunei has a government hospital in each of the four districts with RIPAS Hospital being the main hospital situated in the capital city, Bandar Seri Begawan. RIPAS Hospital provides medico-legal services to the entire country including conducting of post-mortem examinations.

## 2. Methodology

In this study the post-mortem examination reports, the reports of external examinations carried out on dead bodies and other medical records at the RIPAS Hospital pertaining to suicides during the period of study were examined. The demographical data, the methods used to commit suicide, the reasons for committing suicide and the precipitating factors were analysed. As RIPAS Hospital is the centre where all medico-legal cases are handled, the police investigators refer all suicides to our department. An inquest is conducted on all unnatural deaths by a magistrate who arrives at a verdict on the circumstances of a death (accident, suicide or homicide), based on the evidence led before him. It is possible that some cases may have been missed out if a death was not treated as a suicide.

## 3. Results

### 3.1. Age and sex distribution of victims

During the period of the study a total of 124 suicides were identified, 101 males and 23 females (Table 1).

### 3.2. Nationality and sex distribution of the victims

There were victims from ten nationalities within the study group of which 42 (34%) were Bruneians (Table 2). Of the 82 expatriates 46 males were manual workers and 7 females were domestic workers.

**Table 1**  
Age and sex distribution of victims.

Age groups in years	Males	Females	Total
10–19	6	1	7
20–29	31	4	35
30–39	31	14	45
40–49	22	3	25
50–59	6	1	7
60–69	2	0	2
70–79	1	0	1
80–89	2	0	2
<b>Total</b>	<b>101</b>	<b>23</b>	<b>124</b>

**Table 2**  
Nationality and sex distribution of victims.

Nationality	Males	Females	Total
Bruneian	38	4	42
Thai	20	2	22
Indian	15	1	16
Filipino	7	9	16
Indonesian	7	6	13
Nepalese	6	0	6
Bangladeshi	6	0	6
Sri Lankan	0	1	1
Burmese	1	0	1
Malaysian	1	0	1
<b>Total</b>	<b>101</b>	<b>23</b>	<b>124</b>

### 3.3. Ethnicity, sex, mean age and suicide rates of Bruneians

Table 3 shows the differences in the mean age and suicide rates of the different ethnic groups among the Bruneians.

The suicide rate for the expatriates in Brunei was 6.8 deaths per 100,000 per year.

### 3.4. Methods used to commit suicide

Table 4 shows the methods used to commit suicide. There were 57 males and 14 females among the expatriates who committed suicide by hanging. Among the Bruneians there were 27 males and 1 female who used hanging as the method of committing suicide. There were 4 male and 4 female deaths among the Bruneians due to poisoning. Two victims used more than one method; a male hanged himself in the hospital toilet while under treatment for a self-inflicted stab injury of the abdomen and a female first attempted to commit suicide by cutting her neck and then hanged herself.

### 3.5. Possible reasons for committing suicide

The reasons for committing suicide (Table 5) were based on information provided by the medical records, family members, co-workers, suicide notes, circumstantial evidence and from police investigations. As such, this data may not establish the exact reason for committing suicide. The apparent reason for committing suicide was evident only in 75 (60%) cases, of which 26 (21%) cases were due to financial hardships.

Financial hardships leading to suicide was more prevalent among the expatriates, accounting for 22 cases compared to 4 cases among the Bruneians. The leading cause for committing suicide among the Bruneians was chronic illness – 12 (28%); 6 suffered from chronic physical illness and 6 from a psychiatric disorder.

A total of 31 victims were positive for alcohol with 13 having a blood alcohol level over 100 mg/100 ml. No other drugs of dependence were detected in any of the samples subjected to toxicological analysis. There were four drug addicts among the victims. Three of the drug addicts committed suicide by hanging and the other died of self-inflicted firearm injuries.

**Table 3**  
Ethnicity, sex, mean age and suicide rates among the Bruneians.

Ethnicity	Male	Female	Mean age of victims	Suicide rate per 100,000 year
Malay	19	02	32 years	0.5 <sup>a</sup>
Chinese	17	00	51 years	2.3 <sup>a</sup>
Indigenous population(Iban)	02	02	25 years	1.7

<sup>a</sup> Sample of Malay = 273,600, sample of Chinese 45,400 Therefore, Standard Normal Test was used to estimate the *p* value.  $Z \geq 3$  *p* < 0.05.

**Table 4**  
Method used to commit suicide (all nationalities).

Method of suicide	Males	Females	Total (%)
Hanging	84	15	99(80)
Poisoning	6	7	13(10)
Jumping from height	3	0	3(2)
Stab injury	1	1	2(1.6)
Firearm injury	2	0	2(1.6)
Cut throat injury	2	0	2(1.6)
Burns	2	0	2(1.6)
Cut injury wrist	1	0	1(0.8)
<b>Total</b>	<b>101</b>	<b>23</b>	<b>124</b>

#### 4. Discussion

There is an increasing number of young people committing suicide world-over; the proportion of suicides among people below 44 years has risen from 40% in 1950 to 55% in 2000.<sup>5</sup> In our study, the highest number of suicides among the males and females were in the 20–39 year and 30–39 year age groups respectively (Table 1) and as shown in many previous studies the majority of the victims were in the younger age groups; 87 (70%) victims were below 39 years of age. This is probably due to the pressures linked with the change in life styles, the competitive nature of the society and enhanced expectations of the younger generation. In this study, there were no female suicides after 60 years and even among the males, the rate has declined after 50 years. Although in the overall population the younger age group shows the highest incidence, when looking at different ethnic groups within the population the pattern changes. Among the Bruneian Malays and Ibans there were more victims in the younger age groups whereas among the Chinese, the majority of the victims were in the older age group. Consequently the mean age of the victims among the Bruneian Malays (32 years) and Ibans (25 years) was much lower when compared to the Chinese (51 years) – Table 3. A study conducted in Kuala Lumpur General Hospital has also revealed that 84.6% of the victims in the over 60 year age group constituted of Chinese people.<sup>6</sup>

All the victims in the current study were Asians (Table 2). Although there were Caucasian expatriates in the population, no Caucasians were seen among the victims.

In Brunei, the majority of suicides were seen among the expatriates accounting for 82 (66%) with a suicide rate of 6.8 deaths per 100,000 per year. Of the 82 victims, 46 (56%) were male manual workers and 7 (8%) were female domestic workers. The low wage earners and the unemployed are often burdened with economic hardships, which can lead to suicidal behaviour. In 26 cases financial hardships were identified as the immediate reason for committing suicide of these 22 were expatriates. Most studies have shown an increase in the incidence of suicide in those communities exposed to economic deprivation.<sup>7,8</sup> Unexpected deterioration of income or unemployment can trigger suicidal behaviour during times of economic recession. Studies conducted during the periods of global economic recession have shown an increased incidence of

suicide in several countries and this was attributed to the higher unemployment rates during these periods.<sup>9–11</sup>

According to our study, the overall suicide rate for all the communities living in Brunei is 1.9 deaths per 100,000 per year and this was considerably low in comparison to those of other countries in the region and even by world standards. According to the World Health Organization, the suicide rates in Thailand and Singapore are 7.8 and 10.3 deaths per 100,000 population respectively.<sup>12</sup> A study conducted at the Kuala Lumpur General Hospital in 1999 found the suicide rate in Kuala Lumpur to be 7.4 per 100,000 population.<sup>6</sup> When we analysed the data further it was observed that the suicide rates for Malays, Chinese and Ibans (an indigenous community) living in Brunei were 0.5, 2.3 and 1.7 deaths per 100,000 per year respectively. When the proportions of suicides were compared between the Malays and Chinese, the study revealed that the proportion of Chinese suicides was higher than that of the Malay suicides. This difference between the two ethnic groups was statistically significant ( $p$  value  $<0.05$  – Table 3). A study conducted in Singapore in 1988 has also shown that the incidence of attempted suicide among the female Malays in Singapore was much less compared to the female Chinese and the female Indians.<sup>13</sup> An autopsy study conducted at the University Hospital, Kuala Lumpur had revealed that the lowest percentage of suicides was among the Malays followed by the Chinese and the Indians.<sup>14</sup> Thus the results of our study are comparable to the findings in other countries with similar demographic patterns. One of the reasons attributed to the low incidence of suicides in Malays is the influence the Islamic faith has on its followers with regard to suicide. Suicide is strictly prohibited in Islam and is considered a dreadful sin. In a study conducted on suicidal hanging in Dammam in the Kingdom of Saudi Arabia, where 97% of locals were Muslims, only 15.8% of the victims were Saudi nationals while the rest of the victims (84.2%) were expatriates working in Saudi Arabia.<sup>15</sup>

Another aspect of any religion which is supposed to influence one's susceptibility to commit suicide is his/her degree of commitment to the religion (religiosity). The association between religiosity of the general population and the prevalence of suicide in the society has been analysed by some studies. A higher degree of religiosity is said to be associated with lesser tendency for suicidal behaviour among depressed inpatients.<sup>16</sup> A study conducted on suicide rates among young men in Utah had shown a lower risk of suicide in those with a higher level of religiosity.<sup>17</sup> A study aimed at ascertaining the religiosity of the different ethnic groups in the population of Brunei would be useful to understand its impact on the suicide rate.

The method used to commit suicide chiefly depends on the availability of a suitable agent to the victim at the time he/she decides to commit suicide. Thus in 2005 in the USA where firearms were freely available, 53% of suicides were due to firearm injuries<sup>18</sup> and a study in the USA has shown a higher risk of suicide with ready availability of firearms in the household.<sup>19</sup> In some Asian countries such as China and Sri Lanka where agrochemicals were easily available, they accounted for over 60% of suicides.<sup>20</sup> In cities like Singapore and Hong Kong where over 90% of the residents live in high rise buildings, jumping from buildings was the commonest method of suicide.<sup>21</sup>

Table 4 shows the methods used in committing suicide in Brunei. Hanging is one of the most frequently used methods of committing suicide world over<sup>22</sup> and in Brunei it accounted for 99 (80%) of the cases (Table 4). Hanging is a popular method of suicide, as finding a ligature and a place to anchor it (point of suspension) can easily be found in any setting. Though hanging was the commonest mode of suicide among the Bruneians, it accounted for only 67% of the suicides among them as opposed to 87% in the expatriates. Deaths due

**Table 5**  
Reasons for committing suicide (all nationalities).

Reason for committing suicide	Expatriates	Bruneians	Total
Financial hardships	22	4	26
Family disputes	9	4	13
Alcoholism	8	0	8
Strained relationships	7	4	11
Psychiatric disorders	3	6	9
Physical illnesses	1	6	7
Sexual harassment	1	0	1
Unknown reasons	31	18	49
<b>Total</b>	<b>82</b>	<b>42</b>	<b>124</b>

to hanging among the expatriate females – 14 (74%) were much higher than those among the female Bruneians – 1 (25%).

Poisoning was the second most common mode of death; there were 13 (10%) victims, 7 of which were females and 6 were males. Ingestion of pesticides accounted for 8 deaths, 2 were due to prescription drug overdose, 1 due to intravenous injection of atracurium besilate and there were two cases of carbon monoxide poisoning. A higher percentage (19%) of victims had chosen poisoning as a method to commit suicide among the Bruneians in comparison to expatriates (6%). Restrictions on the sale of highly toxic pesticides and their safe keeping in the households could reduce the incidence of poisoning.

Of the two victims who used firearms, one was an expatriate member of the armed forces and the other an ex-soldier who used a homemade firearm. Illegal firearms are unheard of in the sultanate and only the members of the armed forces have access to firearms.

The two victims who died due to burns were Indians. According to a study done in 2004, India has the highest incidence of deliberate self-immolation<sup>23</sup> and a study done in England has found a higher incidence of suicide by burning among the people of South Asian origin.<sup>24</sup> This shows the socio-cultural influence in selecting the method of committing suicide, even among the migrants.

It is often hard to comprehend the precise reason/s for taking one's own life although in certain situations the reason may appear obvious. Chronic illness was the precipitating factor in 16 cases of which 12 cases were among the Bruneians (Table 5); 6 suffered from chronic physical illness and another 6 from mental illness. In a study done in 1998, the estimated life time risk of suicide was 6% for those suffering from affective disorders and 4% for schizophrenia.<sup>25</sup> Five out of the six with chronic physical illness were elderly men and serious physical illness is known to be associated with increased risk of suicide in the elderly males.<sup>26</sup> Family disputes and strained relationships accounted for 24 cases. Educating the public to access the counselling services at times of distress could help to overcome situations that may lead to suicidal ideation.

Alcoholism was the most likely cause for committing suicide in 8 cases and all of them were expatriates. Moreover, all (13 cases) those with a blood ethyl alcohol level over 100 mg% were expatriate males. Alcohol is well known to have an association with suicide. There is a significant prevalence of alcohol abuse and dependence among suicide victims.<sup>27</sup> The life time risk of suicide in alcoholism is found to be between 2% and 7%.<sup>25,28</sup> Among the other actions, alcohol is supposed to increase impulsivity and aggressiveness, two characteristics associated with suicidal behaviour. Sale of alcohol is banned in Brunei. Thus un-availability of alcohol in Brunei would have played an important role in reducing the number of suicides related to alcohol.

Our study showed that the suicide rate in Brunei is very low. The incidence of suicide in Brunei can be further reduced by addressing the key causes and precipitating factors that lead to taking one's own life. This includes close monitoring of psychiatric patients, providing adequate facilities for long term care of those with debilitating physical illnesses, safe keeping of drugs and pesticides in the households and providing counselling services for crisis management.

## 5. Conclusion

Brunei Darussalam records one of the lowest rates of suicide in the world. It could be attributed to the sound economy coupled with a high standard of living, the amiable nature of Malays and the influence of Islam on the Malay community. Prohibition of the sale of alcohol also would have played a major role in reducing the suicidal ideation among the vulnerable individuals. Majority of suicides were recorded among the expatriates. Long standing

illness was a contributory factor for committing suicide among the Bruneians.

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